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ABSTRACT

These three papers explore ways to use television for instructional purposes. "ITFS for Lifelong Learning--'The Development of a System'" (Leonard J. Bathurst) provides a brief historical overview of the background and some of the experiences at California State University, Fresno, as an Instructional Television Fixed Service (ITFS) system was developed. "Presenting Lifelong Learning Opportunities Via Instructional Television Fixed Service Channels: A National Resource" (Russ A. Hart) gives examples of existing and proposed ITFS systems designed to offer lifelong learning opportunities. "Instructional Television Fixed Services: The California State University" discusses the value and benefits of ITFS, especially as it is used at California State University. (YLB)

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PRESENTING LIFELONG LEARNING OPPORTUNITIES VIA INSTRUCTIONAL TELEVISION FIXED SERVICE CHANNELS

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I.T.F.S. FOR LIFELONG LEARNING-

"THE DEVELOPMENT OF A SYSTEM"

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A paper presented at the national conference of the
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I.T.F.S. FOR LIFELONG LEARNING-
"THE DEVELOPMENT OF A SYSTEM"

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The purpose of this portion of the session is to share with you a brief historical overview of the background and some of the experiences we at California State University, Fresno had as we developed an Instructional Television Fixed Service (ITFS) system at our University.

During the 1970's the administration and faculty of our University were well aware of national and regional trends which were influencing adult learners and the institutions responsible for providing their education. The Chancellor's Office of the California State University system was also sensitive to the changing needs of this ever growing population. The Chancellor urged the institutions of the system to creatively and economically develop programs and methods which could satisfy those needs. This was no simple task. A cursory glance at the California scene would reveal that there were many varied educational concerns in this extremely complex group of societies within California's borders. Each of the nineteen institutions had its own set of educational problems to consider.

For example, CSU Fresno is located in Central California. It is in the heart of "perhaps the richest agricultural region in the world". The University serves a population of over 1,000,000 people and an area of approximately 14,000 square miles. 72% of the people live outside the Fresno/Clovis metropolitan area. 48% of the population live in rural or small town settings. The service area has a large fertile valley with majestic mountains that exceed 11,000 feet elevation on its eastern boundary and mountains with lower elevations on the western border of the four county area. Between the mountains and the valley are many communities nestled in the foothills of Central California.

The demographics of the assigned service area reflect an adult population with an older median age group than it had ten years earlier. Many new retail sales outlets, agribusinesses, light industries, insurance firms, transportation industries, and financial institutions, several with regional offices are now located in the Central Valley. It has also been observed that the average age of the university student is approaching 27 years and that the educational needs of the adult population have changed rather dramatically in recent years.

With these and other factors in mind the University administration was concerned with its responsibility for providing outreach programs to existing, as well as potential, adult clients it could serve more effectively.

It had been observed that the educational needs of those who were enrolling in higher education programs offered off campus fell into four categories. They included those adults who seek degrees but find it difficult to participate in traditional higher education programs, those who were upgrading and updating career related knowledge and skills, adults interested in personal or avocational development, and those who were interested in community service-oriented continuing education programs.

Although the University has been reaching out to a number of older adult learners through the use of standard outreach offerings such as extended education and off-campus centers, it was determined that an examination of the "state of the art" delivery systems should be made.

President Harold Haak requested that a telecommunication feasibility study be made for California State University, Fresno.

The study would include a survey of the literature which would reflect the findings of research as related to instruction via television and adult

learners. Data relevant to national and regional telecommunication modalities used in higher education would be gathered. Telecommunication carriers and other resources available for the University's use would be identified. A final concern of the study would include a survey of potential audiences who could benefit from telecommunication services provided by the University.

Current research findings from a variety of reliable sources, such as the Carnegie Commission on Higher Education, the Corporation for Public Broadcasting, the National Center for Education Statistics, and others, tended to reinforce the findings of earlier national and international studies concerned with the values of instructional television. A few of the findings may be worth restating.

It has been repeatedly found that instructional television (ITV) is an effective and efficient way to provide educational services and subject matter information to learners regardless of their age, grade level, range of abilities, or class size.

The investment in television equipment and programming can be justified on the basis of improved quality of the total instruction offered in a teaching/learning situation.

Television brings equality of educational opportunity to all students regardless of whether they are in a small rural area or in a larger urban area.

Students have had to accept more responsibility for their own learning.

More instructional subject matter content can be covered during a televised lesson than is normally covered in a conventional class situation of equal time.

Television can bring to students educational experiences far beyond the potential of the conventional classroom.

Television teaching has proven to be a valuable means of providing in-service and to the job site training.

ITV can extend the range of experiences available to learners, present new materials using a variety of approaches, reinforce materials taught in other lessons and bring new resources into the learning environment.

Telecommunications methodologies enable educators to deliver education where and when learners want to access and/or utilize it.

Post-secondary use of television for higher education offers a variety of non-instructional purposes. These include counseling, promoting and recruiting new students, staff development, community forums, information about the institution, and other forms of community outreach.

On the negative side, research has found that the factors contributing the most to constrain the use of television for instruction are the unsympathetic attitudes of some faculty members to attempt to use television for instruction. Another deterent has been the inability of institutions to provide necessary support services, such as faculty contact with outreach students, flexible registration procedures and other services which require modifications of common administrative practices.

In summary it was found that telecommunications could offer new ways of meeting adult learners and outreach challenges by:

Improving student performance and achievement;

Serving community needs;

Distributing education geographically

Increasing the effectiveness of educational time and resources;

Increasing access to learning; and

Providing instruction and services.

During the feasibility study an attempt was made to become better informed about the uses being made of Instructional Television delivery systems in higher education. A report in the September 2, 1980 Volume No. 2, "Chronicle of Higher Education" revealed that there was a dramatic expansion of the uses of television and other communication media in higher education planned for the 1980-81 academic year. It was reported that, at the University level, there was greater interest in television, telecourses, technological improvements, and an increase in the exploration of new markets by colleges and universities. The interests occurred at a time when the population of the traditional college age group was expected to decline.

Several universities, consortia and educational networks were interested in utilizing various methods of telecommunication for instruction. A survey of the program offerings, structures, and philosophies of the National University of Telecommunications in Education, the University of Mid America, the Applachian Community Service Network, the Central Education Network, the American Educational Television Network, the American Association of Community and Junior Colleges, Maryland's University College and Maryland Center for Public Broadcasting, and the National University Consortium for Telecommunication in Education was made for possible recommendations at CSUF, Fresno. Resource people were brought to our campus to share their telecommunication views with the faculty and administration.

Additional support and rationale for the inclusion of telecommunications as part of the delivery systems to be utilized in higher education can be found in the Ford Foundation's "Planning for Higher Education" papers entitled "A Telecommunications Primer for College Presidents", and California Post Secondary Education Commission's "Using Instructional Media Beyond Campus".

At the California State University system level plans were underway to develop a "1,000 mile campus" which would teleconnect the State Universities from the Oregon to the Mexican borders with a terrestrial microwave network. The network would be equipped to send not only live or recorded televised classes but, would transmit electronic signals carrying teleconferences, audio FM radio signals, computer data, facimile, electronic mail, satellite transmission, video seminars, telephone, slow scan signals, library automation and other electronic delivery systems througout the State.

In order to make the faculty and administrators more aware of, and keep abreast of the developments, the Chancellor's Office provided leadership by sharing reports and results of feasibility studies and by conducting ITFS and ITV conferences and seminars throughout the CSU System.

It was believed that at the local level, with the philosophical and fiscal support of the administration and faculty, telecommunications could provide a viable delivery system to be added to the existing adult learner and outreach program.

On campus and off campus evening and weekend programs could continue to satisfy the needs of some of the older students, but the vast majority of these people might best be served through a variety of telecommunications media while remaining in their homes, in their places of employment, or by attending group learning sessions in selected receiving site centers.

Credit, as well as non-credit, telecommunications delivery system offerings could be provided by the University to help satisfy the educational and cultural needs and requirements of the individuals. Educational institutions, licensing and credentialing bureaus and agencies, industries, commercial firms, and professional societies could also benefit from the system.

If the University selected to reach out and provide these expanded instructional services to the wide variety of communities within its service area a great amount of time, travel, money, and energy could be utilized more effectively.

Before recommendations for any electronic delivery system could be made during the feasibility study, other areas of concern had to be investigated. Focus was directed to some preliminary technical and legal aspects of providing outreach instruction. These concerns involved guidelines, recommendations, and regulations of the Federal Communications Commission and other governmental bodies.

In order to learn which delivery systems originating from the campus were feasible it was necessary to know what telecommunications commitments had been made in the central California area. Not only was it essential that awareness of the obvious transmitting stations be known, but knowledge of assigned and applied for frequencies in the regions located within a radius of 100 miles of Fresno had to be considered. This information had to be supplied through technical frequency searches. These searches and other technical data required the cooperative services of television engineering personnel from both on and off campus sources. Contracts with outside technical resources who specialize in providing these services are essential in the early planning stages if a television system is to be operational.

At the time the study was being conducted the University's service area had no fewer than six commercial television broadcasting stations, one Public Broadcasting Station (PBS), four cable television companies (CTV), and one Instructional Television Fixed Service (ITFS) county wide educational system with approximately two hundred (200) receiving sites in operation.

Because it was shown that a television viewing void could be filled with unique higher educational services that would not conflict with existing programming, and that the University would be selective in its offerings, each of the operating telecasters provided support and cooperation throughout the study. Technical, programmatic, and managerial assistance were freely given at all levels of operation within the units approached.

It was determined, after a television engineering study of the area had been completed, and with the knowledge of what was being done with telecommunication throughout the California State University system, that an Instructional Television Fixed Service (ITFS) system should be recommended to help satisfy the outreach needs of the University's adult learners. Following the engineering studies which considered the land area, the mountainous terrains, the location of communities to be served, the availability of frequencies, the relative construction and operation costs, and their recommendations that ITFS would provide the best outreach system, applications for ITFS licenses in the "A" and "E" Groups were submitted to the Federal Communications Commission. After waiting several months for approval of the frequency assignments from the Federal Communications Commission they were granted.

It was apparent from the onset of the feasibility study that regardless of the instructional delivery system selected to supplement the University's outreach program that funds for any proposed program had to be committed at the highest level in order for any viable project to be developed and implemented. With commitments from the University President and the Dean of the Division of Extended Education and their requests to, and approval of, the Chancellor's Office for access to CSU, Fresno's Continuing Education Revenue Funds for the initial funding of the I.T.F.S. system, the next phase of the program was set

in motion. With approximately $368,000.00 designated for structural modification, technical engineering frequency surveys, tower construction, and the purchasing of television cameras, transmission/reception support equipment a plan of action was facilitated.

It was determined that since the Speech Arts Building houses the existing on-campus television studio/control room complex, the I.T.F.S. originating facilities should be located in the same building. A classroom was designed and remodeled to function as a "Candid Classroom" which would serve the needs of live interactive televised classes. The room would also be used for teaching non-televised classes when the campus would not be offering live televised courses.

As the result of the technical progress being made on campus observable changes which tend to reflect a growing interest in ITV are occurring. Throughout the University a variety of instructional television activities have been more visible lately. These activities are encouraging to those faculty members and administrators who have been involved in the I.T.F.S. project and its development from the conceptional stage to its present state. During the past two years the "Candid Classroom" and the adjoining control room have been functioning in various experimental and testing modes. Transmission facilities are being designed, constructed and installed. Faculty committees concerned with telecommunication media instruction have been activated. They are establishing guidelines, and making programmatic decisions, in preparation for the activation of quality instruction via California State University, Fresno's I.T.F.S. system.

With the implementation of the University's newest outreach instructional system it is anticipated that thousands of adults throughout Central California

will benefit each year as the result of their participation in lifelong learning opportunities provided.

PRESENTING LIFELONG LEARNING OPPORTUNITIES VIA INSTRUCTIONAL TELEVISION FIXED SERVICE CHANNELS: A NATIONAL RESOURCE

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PRESENTING LIFELONG LEARNING OPPORTUNITIES VIA INSTRUCTIONAL TELEVISION FIXED SERVICE CHANNELS: A NATIONAL RESOURCE

In recognition of the distinctly adult learner--older, employed, career-centered, goal-oriented, self-disciplined, with family responsibilities, and often living at a considerable distance from educational institutions--electronic technology is increasingly being employed to present lifelong learning opportunities. The movement toward the conceptualization of education as a continual process for personal fulfillment coincides with society's transformation from the industrial era to the age of communications. There has been a natural historical convergence of a public demand for a product--education--and the means--the media--by which the product can be taken directly to consumers at their convenience (Perry, 1977). As Theobald (1976) and Toffler (1980) have noted, information systems in the age of communications will increasingly be designed to provide people with the distinct data, human contacts, ideas, and models they need to deal with their specific concerns at particular moments of their lives.

The adult demand for university-level education is one factor in the current distance-learning milieu (Zigerell, 1984). The pressure on formal higher education has triggered demands for alternative ways to achieve credentialing, such as credit for life experience. There is evidence that to a large extent the desire for credentials is the driving force behind open and distance learning projects (McIntosh, Woodley, & Morrison, 1983; Hoachlander, 1977). The more academic credit distance and nontraditional learners have, the more they desire. Even when learning is informal, the

learners still welcome recognition (Pike, McIntosh, and Dahllof, 1978). The proclivity for credentialing, especially in the Western societies where formal credentials open doors to success, is simply another sign of the need for lifelong learning on purely utilitarian grounds. Most adult educators are in agreement with the Green Chair Group that an aging population will want more education, both formal and nonformal, that furthers career change, improves family and personal life, and enriches leisure time (Waniewicz, 1982).

Distance-learning projects have proved to be remarkably versatile educational conduits, particularly when instruction is delivered via the broadcast media, or by closed-circuit technologies now readily available, such as videocassettes, cable TV, or satellite. The transformation of adult education by electronic technology has progressed from a curiosity to a national phenomenon in the United States. Chicago's TV College, established in 1956, is believed to be the oldest remote-study program using educational technology as the basis for its course delivery system (Ely, 1984). A fully accredited program of the Chicago City Junior College system, the TV college offered a wide variety of courses leading to the Associate of Arts degree. While still in operation today, the last official Ford Foundation Report (Zigerell & Chausow, 1974) indicated more than 200,000 students, 70 to 75% of whom are female, have taken courses; more than 500 degrees have been awarded for study entirely by TV; and over 2,500 students have received degrees with one or more semester being completed through the TV College.

Beyond initiating the TV College, the community college sector of American adult education was instrumental in returning education to public broadcasting (Wood & Wyle, 1977). Educational television on the college level came of age in January, 1975, when a 13-part series called The Ascent of Man, which traced man's development through his achievements in science, made its debut on Public Broadcasting Service (PBS) stations. What made The Ascent of Man a unique educational experience was the development of a college-credit course based on the series. Some 250 colleges and universities, including 60 community colleges, offered the course to over 23,000 students enrolled for credit (Rein, 1975). The Ascent of Man was responsible for spawning programs such as Civilization, America, The Adams Chronicles, and many other more recent credit telecourse programs (Munshi, 1980; Purdy, 1983a).

After months of consultation with college educators and public broadcasters, PBS established an Adult Learning Programming Department in July, 1980. Working in association with local public television stations, the satellite-based service became the first national initiative to deliver adult learning materials to interested colleges and universities. According to a Report (1982) issued by the PBS Adult Learning Service at the completion of its first year of operation, 555 colleges and universities offered 53,000 students the opportunity to earn credit toward a degree. In total, more than 1,600 television course offerings in the areas of informal learning, college credit, and professional development were broadcast during the first year. Recent PBS news releases place enrollments at about 50,000 students each term.

While historically the use of technology-based distance education has been predominantly via open-channel broadcasting, Instructional Television Fixed Service (ITFS) channels represent another electronic tool in the adult educator's armamentarium which is a low-cost alternative to conventional transmissions. Far above the ordinary broadcasting band, the low-powered system requires a special receiving antenna and down-converter so that the transmitted 2,500 mHz signal can be converted to a standard TV channel and displayed on an ordinary receiver. The characteristics of this portion of the microwave spectrum are such that television signals can be transmitted only when there is direct line-of-sight. Further restrictions by the Federal Communications Commission (FCC) limit power from 10 to 100 watts. Thus, the effective practical range of transmission is at a maximum from 20 to 50 miles. The primary advantage of the ITFS system is that any single licensee may apply for up to four different channels, making a multichannel service possible.

Another advantage of ITFS systems is the significantly lower equipment costs. ITFS programs are broadcast by relatively inexpensive transmitters ($25,000-$35,000) over low cost antennas ($6,000). Depending upon the distance from the transmitter, an antenna and down-converter at a receiving site may be purchased for as little as $300 up to $2,000. Savings are also accrued on other associated equipment: TV cameras, video switcher, and audio console. For comparison purposes, installation of a single ITFS channel will be only 5 to 10 percent of the cost of a high-powered, conventional television station (See Ross, 1985a). Economy and multichannel service make ITFS ideal for many distance-education systems.

ITFS channels are not new distance learning enterprises. In 1961, an experiment was inaugurated with the Plainedge public schools in Long Island, New York, to test the feasibility of a new limited-broadcast technique. The simultaneous transmission of course material to multiple sites proved to be technically satisfactory and, in July, 1963, the FCC authorized establishment of the ITFS class of broadcast station in the 2,500-2,690 mHz range of the electromagnetic spectrum. The ITFS reservations included 31 different channels, limited strictly to educational users. The first licensed systems were placed the air in late 1964 by the Mineola (Long Island) and Parma, Ohio, school districts. By the early 1970's, more than 100 different licensees were operating about 300 channels. In 1982, 83 educational entities consisting of public schools, private schools, colleges and universities, medical schools, and consortia were serving 5,753,853 students over 626 ITFS channels (Curtis & Thayer, 1983).

In an era of declining resources for higher education, many colleges and universities are turning to ITFS to reach adult learners, the most promising of the new student markets. One of the most extensive applications of the extended classroom approach is the interactive instructional ITFS installation at the University of Southern California. The heart of the system is the main campus TV Center which has four studio classrooms, each of which is equipped with three remote-controlled cameras--one camera at the rear of the room focusing on the teacher, one overhead camera focusing on the demonstration and slide transparancy area in front of the teacher, and one camera in front of the room focusing on

the students. The three cameras are operated by a single technician in the rear of the room (USC I-ITV, n.d.).

Each studio classroom in the TV Center is normally connected to one of the four ITFS transmitters, which beams the ongoing unrehearsed classroom lecture-discussions throughout the greater Los Angeles region. There are fourteen receiving locations in the area, most of which are at various corporate sites. The basis for the ITFS system is to provide academic opportunities for credit courses in business and engineering at numerous company locations. Full-time employees can, thus, enroll in regular campus courses and participate through the outlying viewing centers without having to attend classes on campus. Every remote viewing center is equipped with microphones and an audio transmitter which can relay questions and comments back to the campus studio classroom in order to facilitate student interaction (Wood & Wyle, 1977).

As part of the search for adult students, higher education has been extensively courting business and industry. Engineering schools now make broad use of ITFS in their continuing education programs. Stanford University pioneered the employment of ITFS to extend professional and graduate-level education to engineers and technicians who view programs at over 40 plant sites in the San Francisco Bay area. The entire Stanford operation is supported by "Silicon Valley" companies which pay tuition roughly double the normal amount (Davis & Skelton, 1978). Under pressure from local electronic industries which wanted a recruiting tool to attract high quality engineers to the Phoenix area, the Board of Regents mandated Arizona State University to establish an interactive ITFS system. Since

the fall of 1982, 12 remote locations at subscribing high technology companies were receiving 36 engineering courses per semester via four channels (Craft & Wagner, 1985).

In addition to the field of engineering, colleges and universities in the United States offering specialized professional education have made effective use of ITFS to reach adult students off campus. Under the umbrella of the Association for Higher Education of North Texas, the business service of the TAGER network provides a mechanism for nine Texas institutions of higher education to pool their resources to meet the needs of the technology-intensive industry in the Dallas-Fort Worth area (Association of Higher Education of North Texas, n.d.). At a modest cost, TAGER will provide credit and noncredit courses in engineering, computer science, and business management to employees at the work site. Courses can be chosen from the catalogue, or they can be custom designed to the employer's specifications. Courses originate at the TAGER studios or are received by satellite for retransmission to clients by ITFS or cable. Many opportunities are provided for conversation with the teaching faculty, both on site and through telecommunications links. The master's degree can be earned from participating institutions based entirely on course work provided by the network. Significantly, TAGER is planning to add satellite transmission capacity to its system and thereby extend the network's reach worldwide (Tucker, 1983).

In addition to TAGER, the Indiana Higher Education Telecommunication System (IHETS) is recognized as being among the leaders in delivering live, televised instruction with interaction for adults. Unlike TAGER, IHETS is

supported in its entirety by state funds. For 18 years, IHETS has provided closed-circuit viewing with talk back via the computer-controlled, switched Video Network for higher education institutions in Indiana. To cite only a few examples from one semester, Indiana University (I.U.), from its Bloomington campus, originated an undergraduate basic astronomy course and graduate library science and instructional system technology courses for its other campuses. The I. U. School of Medicine fed four hours of continuing medical education to 48 hospitals outside of Indianapolis (60 total, including 12 in Indianapolis) each weekday, with a four-hour repeat each weekday evening. I. U.'s School of Nursing offered three graduate-level courses statewide. From West Lafayette, Purdue University originated master's-level and continuing professional engineering courses not only to its other campuses, but also to industrial locations across the state. Ball State University offered a home economics course, and Indiana State University at Terre Haute originated a graduate-level public-school administration course for its campus in Evansville and adult learning centers in three other cities (Gruebel, 1983).

Locally originated, live, televised instruction, often with an interactive component patterned after TAGER and IHETS has been a successful format for the delivery of lifelong learning programming, but many smaller systems are modifying these successful models for their own purposes. For example, Kirkwood Community College in Cedar Rapids, Iowa, began building a telecommunication system in 1978 with federal funds. The system now links community education centers in seven counties to its main campus via live, two-way color television. Off-campus college credit courses are offered as

well by programming telecourses on a local cable television access channel. Recently Kirkwood has decided to reach incarcerated adults at the Iowa State Men's Reformatory by offering credit courses and vocational programming through an ITFS channel (Tate & Kressel, 1983).

The Pinellas County School System, St. Petersburg Junior College, and three cable companies are cooperating in an effort to reach 90 percent of the area's population over the age of five. Beginning two and a half years ago, the ITFS system has four channels which transmit 16 hours of programming a day to the general public, more than 100 schools, and St. Petersburg's four college campuses. The three cable companies bring programming directly into the homes of viewers and institutions that are not equipped to receive ITFS signals. Most of the prerecorded programming comes from the Florida State Department of Education which negotiates program rights for a state library. ' Telecourses offered include such subjects as oceanography, personal and community health, the government of the United States, business and finance, and various subjects in the humanities. Many of the telecourses may be used to fulfill requirements for Florida's program of teacher recertification (Nelson, 1985).

South Carolina and Hawaii have recently received legislative funding to implement statewide ITFS networks. In South Carolina, the project is replacing a statewide closed-circuit system that used a leased microwave-cable network with 32 four-channel ITFS stations. The plan calls for more than 500 receive locations to be put in place across the state in such institutions as hospitals, schools, law enforcement agencies, fire stations, colleges, and universities. Most of the instructional

programming will come from the South Carolina Educational Television Library, which leases telecourses and other program materials according to demand. Use of original programming on the system does not, and probably will not, receive much emphasis (Hopkins, 1983).

When the Hawaiian ITFS system is activated, the network will have conquered some of the most difficult geographic challenges of ocean and terrain in the nation. Utilizing microwave and ITFS transmissions, the proposed network will reach population centers on six of the Hawaiian islands overcoming distances of up to 92 miles between the islands. Program signals originating from three of the islands will be delivered to a central station in Honolulu where they will be switched to the entire network. Receiving sites with telephone links for interactivity will be established at all state and county government agencies, every public school, and the nine campuses of the University of Hawaii. Long-term goals for the network include: in-office training programs for government workers; continuing education for business employees; sharing of educational and cultural resources; teacher training; and education and training for the handicapped. The University of Hawaii has projected a demand for nearly 150 class hours per week (Nelson, 1985).

Many other examples of existing and proposed ITFS systems designed to offer lifelong learning opportunities in higher education, business and industry, and medicine could be given (e.g., Barnes, 1979; Kaminsky, 1985; Meuter, Wright & Urbanowicz, 1982; Purdy, 1983b; Tate & Kressel, 1983). Distance education provided by electronic media has undergone remarkable growth in the past 15 years, because it has proved to be a relatively

inexpensive way to respond to pressures occasioned by desires for individual fulfillment and social unrest. Yet, relatively few educators have taken an active role in telecommunications via ITFS. At the request of commercial operators who claimed ITFS channels had been underutilized, the FCC reallocated eight of the twenty-eight channels reserved exclusively for educational purposes to pay-television use in May, 1983. As adopted, General Docket 80-112 authorized holders of ITFS licenses to generate revenue by leasing any unused channels or time (for a discussion of the original docket refer to Curtis & Blatecky, 1980).

As might be expected, there were problems with the ruling. The opportunity for gain that leasing afforded gave rise to a new generation of profit-seeking interests that were only nominally educationally oriented. Educational or psuedo-educational entities backed by commercial companies with leasing agreements for 75 percent of the channel capacity have applied for frequencies in major markets across the country. One firm was identified as being behind filings by nonlocal applicants for ITFS licenses in more than 100 major markets (Curtis, Stambler & Ritholz, 1985). Even the Public Broadcasting Service filed for new ITFS facilities in communities across the country for the delivery of the proposed National Narrowcast Service (National Narrowcast Service Demonstration Project, 1983). While there are no official statistics, the FCC estimates there are currently about 700 applicants vying for 200 ITFS licenses (Ross, 1985a).

The purported educational organizations involved in the nationwide proposals possess no meaningful experience in the provision of significant amounts of instructional programming for ITFS operators or in the

development of ITFS services. In addition, not one of the nationwide applicants had any specific compositional connection with the relevant local educational, cultural, or civic constituents in the markets in which they applied. The nationwide ITFS applicants offered only pre-packaged programming formats which were uniformly applied to all communities, irrespective of local educational needs. Local groups appeared to have had no role whatsoever in the selection or design of the nationwide ITFS programming services (Woods, Stevenson, & Volkov, 1985).

With the announcement by the FCC to review the basic rules and policies relating to ITFS in Docket 83-523, the entire future course, direction, and development of the spectrum was once more before the commission. Educators triumphed with the issuance of the second Report and Order on May 31, 1985. Local applicants scored a clear victory with the commission's ruling to adopt a "local priority period" of one year, beginning on the effective date of this decision, in which only locally based educational entities are exclusively eligible for ITFS channels (Ross, 1985b). Nonlocal entities may obtain licensure only for frequencies still vacant at the expiration of the one-year period and only if they meet the standard eligibility requirements. In this regard, nonlocal applicants, to conform to the accreditation prerequisite, must establish a local program committee in each community in addition to submitting letters of intent from receiving location administrators, detailing the type of programming provided to students of accredited schools and the planned hourly usage per week (Costlow, 1985).

Higher education must not delay or ITFS will be lost. The pace of technological regulation and innovation, the demand for recredentialing and continuing professional education as well as education for self-fulfillment, and the rapid transition to an information society--all these forces press for the development of comprehensive lifelong learning approaches to distance education via telecommunication. The increase in social responsibility on the part of higher education has manifested a concern for developing new ways to deliver instructional services to individuals so that they may continue learning throughout their lives at their convenience in terms of time and place. This focuses our thinking in a new direction about how and where learning takes place. Education is no longer seen as a monopoly of educational institution facilities and their teachers. The resources for learning are perceived everywhere in the environment and from a variety of sources. The modern task of higher education, therefore, becomes one of finding new ways to link the learner with the learning resources. The ITFS channels of electronic technology provide a viable option to serve lifelong learners in the search for the keys to successful living; however, higher education must hurry, or ITFS will become yet another missed opportunity.

References

Association of Higher Education of North Texas (n.d.). TAGER television network: Bringing higher education to your place of business. Richardson, TX: Author.

Barnes, B. (1979). Report of the needs assessment for college credit courses via instructional television fixed service (ITFS) in the Denver metropolitan area (Johnson Foundation Research Report). Denver: Auraria Media Center. (ERIC Document Reproduction Services No. ED 248 842)

Costlow, D. (1985, July). Analysis of recent regulatory changes and the impact on future growth and preservation of instructional television fixed services. Beyond Sesame Street: The learning never stops--instructonal television in the eighties. Symposium conducted at The California State University, Long Beach.

Craft, E., & Wagner, N. (1985, January). Establishing an instructonal television service. Paper presented at the annual conference of the Association for Educational Communications and Technology, Anaheim, CA.

Curtis, J., & Blatecky, A. (1980). ITFS--a major educational resource under fire. Educational & Industrial Television, 12(10), 47-54.

Curtis, J., & Thayer, N. (1983). Preserve the ITFS spectrum for ITFS systems. Educational & Industrial Television, 15(6), 47-54.

Curtis, J., Stambler, A., & Ritholz, A. (1985). ITFS at the cross-roads--again. E-ITV, 17(3), pp. 66, 70-72.

Davis, C., & Skelton, M. (1978). The ACE program--continuing education for business and industry. Educational & Instructional Television, 10(1), 48-53.

Ely, D. (1981). Educational technology in comparative adult education. In A. Charters & Associates (Eds.), Comparing adult education worldwide. San Fransisco: Jossey-Bass.

Gruebel, J. (1983). Adults learning by television: A reappraisal. The College Board Review, 128, 11-15.

Hoachlander, M. (1977). The Ascent of Man: A multiple of uses: A case study. Washington, DC: Corporation for Public Broadcasting.

Hopkins, G., Jr. (1983). The new ITFS system in South Carolina. E-ITV, 15(7), 50-52.

Kaminsky, A. (1985). ITFS at Emory University still going strong. E-ITV, 17(6), 35-6.

Meuter, R., Wright, L., & Urbanowicz. (1982, July). Closed-circuit educational television (ITFS) in northeastern California: The 33,000 square mile campus. Paper presented at the World Future Society's Fourth General Assembly, Washington, DC.

McIntosh, N., Woodley, A., Morrison, V. (1983). Student demands and progress at the open university--The first eight years. In D. Sewart, D. Keegan, & B. Holmberg (Eds.), Distance education: International perspectives. New York: St. Martin's Press.

Munshi, K. (1980). Telecourses: Reflections '80. Report on station-college executive project in adult learning (SCEPAL). Washington, DC: Corporation for Public Broadcasting. (ERIC Document Reproduction Service No. ED 191 115).

National narrowcast service demonstration project. (1983). Washington, DC: Public Broadcasting Service.

Nelson, N. (1985) Around the nation with ITFS. E-ITV, 17(6), 28-34.

Perry, W. (1977). The open university. San Francisco: Jossey-Bass.

Pike, R., McIntosh, N., & Dahllhof. (1978). Innovation in access to higher education. New York: International Council for Educational Development. (ERIC Document Reproduction Service No. ED 168 381)

Purdy, L. (1983a). The history of television and radio in continuing education. In L. Purdy (Ed.), Reaching new students through new technologies. Dubuque, IA: Kendall-Hunt.

Purdy, L. (Ed.). (1983b). Reaching new students through new technologies. Dubuque, IA: Kendall-Hunt.

Rein, M. (1975). The ascent of man. Community and Junior College Journal, 45(8), 9.

A report of the first operational year of the PBS adult learning service. (1982). Washington, DC: Public Broadcasting Service.

Ross, J. (1985a). The politics of ITFS: Questions of control and construction. E-ITV, 17(6), pp. 26-27, 50.

Ross, J. (1985b). The FCC's action on ITFS. E-ITV, 17(7), 48-49.

Tate, P., & Kressel, M. (Eds.). (1983). Concluding comments and further resources. New directions for higher education: The expanding role of telecommunications in higher education (No. 44). San Francisco: Jossey-Bass.

Theobold, R. (1976). Beyond despair. Washington, DC: New Republic Book Company.

Toffler, A. (1980). The third wave. New York: William Morrow and Co.

Tucker, M. (1983). The turning point: Telecommunication and higher education. In P. Tate & M. Kressel (Eds.), New directions for higher education: The expanding role of telecommunications in higher education (No. 44). San Francisco: Jossey-Bass.

USC I-ITV. (n.d.) Los Angeles: University of Southern California.

Waniewicz, I. (1982). Adult learners: Who are they, why and where do they learn. In J. Daniel, M. Stroud, & J. Thompson (Eds.), Learning at a distance: A world perspective. Edmonton, Alberta: Athabasca University.

Wood, D., & Wyle, D. (1977). Educational telecommunications. Belmont, CA: Wadsworth Publishing Co.

Woods, R., Stevenson, M., & Volkov, M. (1985). ITFS--a truly local service. E-ITV, 17(4). 68-71.

Zigerell, J. (1984). Distance education: An information age approach to adult education. (Information Series No. 283). Columbus, OH: The National Center for Research in Vocational Education.

Zigerell, J., & Chausow, H. (1974). Chicago's tv college: A fifth report. Chicago: City Colleges of Chicago. (ERIC Document Reproduction Service No. ED 089 806)

PRESENTING LIFELONG LEARNING OPPORTUNITIES

VIA

INSTRUCTIONAL TELEVISION FIXED SERVICE CHANNELS

INSTRUCTIONAL TELEVISION FIXED SERVICE: THE CALIFORNIA STATE UNIVERSITY

DAVID E. LEVEILLE

NATIONAL ADULT EDUCATION CONFERENCE
MILWAUKEE, WISCONSIN
NOVEMBER 6-9, 1985

INSTRUCTIONAL TELEVISION FIXED SERVICES: THE CALIFORNIA STATE UNIVERSITY EXPERIENCE

The California State University (CSU) is an active participant in the provision of Instructional Television Fixed Services (ITFS) for distant learning programming throughout the State of California. By its member campuses, CSU serves not only the educational needs of over 316,000 learners on its 19 campuses, but also provides essential lifelong educational opportunities to the community-at-large. ITFS, as one aspect of educational telecommunications functioning within CSU, provides wide and distant access to CSU's educational resources.

Currently there are 10 campuses with operational ITFS systems, 2 campuses have ITFS systems under construction, 1 campus has a Construction Permit application on file with the Federal Communications Commission (FCC) while one other campus will be applying before the end of the year. CSU believes that the lifelong educational needs of the state to which we are responding has many dimensions:

1. advanced high technology education for the industries which provide substantial support to the state's economic base;

2. the development of programs in English, math and science directed toward high school students;

3. increasing linkages with community colleges in the design of

meaningful educational "pathways";

4. the design of training programs responsive to pressing problems within the hospital/medical professions;

5. implementation of English as a Second Language Programs to provide support in meeting a very significant community need.

The information revolution, with accompanying growth in use and variety of information technologies, will profoundly change higher education as it has, and will, change society. Electronic delivery of education is especially attractive in the West with its widely dispersed population. For example, the 13 states served by the Western Interstate Commission for Higher Education (WICHE)--Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming--have 49% of the U.S. land mass but only 19.3% of the population and 24.7% of the college enrollments. Moreover, 57.1% of the institutions in the West, with 89.4% of the enrollments, are state supported, making higher education in the West predominently a public enterprise.

CSU's member campuses hold in excess of 30 ITFS licenses and Construction Permits and are committed to the full development and dissemination of educational resources in their respective localities. To further expand the availability of lifelong educational programming to the public, CSU's campuses are pursuing concrete, long-range plans to fully utilize this valuable and important resource known as ITFS. In the Los Angeles Basin, five (5) CSU campuses have formed the Los

Angeles Basin ITFS NETWORK and have integrated their ITFS stations to comprise a fully integrated NETWORK offering extensive program choice and diversity. Other campuses, particularly Chico, Sacramento, Stanislaus and, soon, Fresno, will be able to share programming and other resources through the Central Valley Microwave Network. Distant education via educational telecommunications is increasingly becoming reality rather than rhetoric.

For a variety of reasons, ITFS has grown slowly since its inception, and across the country much of the spectrum space allocated to it has not been fully used. The special requirements of ITFS, and the political and budgetary realities facing most ITFS licensees, have restrained the development process. It is not an indictment of the service that educational institutions have only recently begun to realize the full potential of ITFS. ITFS has steadily expanded and diversified its service in universities, schools, and communities. Growing awareness of ITFS, plus new sources of funding, such as National Telecommunications and Information Administration (NTIA) grants, have been primarily responsible for the recent surge of development while the FCC has provided some incentive.

In CSU, the outstanding success of Chico's ITFS system for almost 15 years has spurred on other campuses. Stanislaus, located in Turlock, has received national recognition for its innovative use of ITFS as a delivery system to geographically isolated learners and collaborative efforts with community colleges and public schools. Pomona also has received national recognition for POLYNET, an ITFS system offering distant learning opportunities to area high schools. San Diego State

has used ITFS for several years to exchange programming with its Imperial Valley Center, interconnection with local cable franchises and, more recently, is expanding its efforts with business/industrial sites throughout the region. The San Jose campus has initiated a program with community colleges and will soon be expanding into California's Silicon Valley.

With new ITFS efforts underway in Fresno, San Bernardino, and, soon, Bakersfield, CSU campuses will be using ITFS in almost every major population market of the state as well as much of the state's remote geographical areas. Seen as a means to an end rather than an end in itself, ITFS is viewed as one technology that can link with other technologies, such as satellite transmission, microwave and cable networks, and many others. Lifelong learning is enhanced through the interactive capability of ITFS which facilitates distant learners in their communicatin with the host campus.

Contrary to the belief of some, ITFS frequencies are not a national resource. The time and great value of ITFS lies with its ability to extend the reach and effectiveness of local education. CSU is utilizing ITFS to fulfill its mission and be responsive to the ongoing educational needs associated with public schools, hospitals, local government, business, and industry. Being an interactive technology, ITFS enables campuses some flexibility to adapt to changing educational demands.

ITFS is a valuable educational tool. It is particularly important given the financial considerations associated with all levels of

education.

ITFS is an effective learning tool. Because it allows faculty to come to students, ITFS maximizes educational opportunities. Its two-way capability and group (as opposed to individual) environment stimulates learning. ITFS' multiple channel capability allows variety in educational programming and flexibility in scheduling to maximize educational opportunities.

There are many instructional uses for ITFS.

- o Professional training and graduate and continuing education of doctors, nurses, engineers, teachers, lawyers;

- o Educational and in-service training for business and industry;

- o Program distribution for public and private primary and secondary schools; and

- o High school equivalency programs at night.

ITFS also is cost-effective education. ITFS allows instructors to reach many different students in many distant locations at one time. It also allows programs to be recycled and exchanged so as to maximize the educational benefit from one program. With the advent of ITFS in

any geographical area, people have access to educational programs not only at a campus but also at places of employment. The transmittal of information, for knowledge workers, is the nexus of an ITFS system.

For CSU, ITFS provides a viable, cost-effective and time and energy efficient alternative for meeting the demands of business, industry, education, and health services for lifelong educational support of human resources. For the working professional instead of having to travel to distant classrooms or training centers, ITFS brings the educational courses and programs to the learner via interactive television. (The "interactive" television programming refers to the ability of learners at various learning sites to talk with their instructors, as well as other learners participating in the ITFS system throughout the region.)

We would be remiss if we closed at this point without identifying at least one issue before ITFS licensees, or would-be licensees. As a result of rulings by the FCC in 1963 and 1971, 28 channels of ITFS were reserved exclusively for non-profit educational purposes. In some communities, such as Los Angeles, educators at all levels have made extensive use of ITFS technology while in others they have made little or no use of ITFS. Recently, the FCC has been pressured by many for-profit organizations to make ITFS channels available for commercial use. In 1984, the FCC took action that reallocated 8 channels of ITFS (E and F Groups) to commercial interests, leaving educational institutions with 20 channels. The opportunity to lease unused capacity and a "grandfather" clause was intended to protect those systems already transmitting over the channels that the FCC

reallocated to commercial users.

The education community finds itself faced with a complex situation as a result of the "gold rush" for leasing arrangements initated by commercial interests and by subsequent FCC actions relating to the "grandfathered" channels in particular. In addition to applications from "national filers" claiming local "market" involvement, many holders of E and F channels have been stymied in their efforts to expand their current instructional schedules as the demand for programming increases nor have they been able to protect new receive locations from interference generated as a result of commercial users' presence.

Despite this problem (efforts are underway to remedy the situation--more needs to be done), CSU continues to see ITFS and other telecommunications technologies to individualized instruction and support services as extremely important for lifelong learning. Through these efforts it will be increasingly possible to decentralize educational services that have traditionally been available on the campus. CSU sees the technologies as a means to serve learners that are dispersed over large geographical areas, particularly in the face of rising energy costs and funding constraints.

CSU believes that ITFS is part of a growing array of telecommunications technologies available for distance education purposes. We value the benefits to be derived from its utilization. We envision further growth and development at the local level while collaborative efforts are undertaken to fend off the incursion of commercial interests into this important resource.

THE CALIFORNIA STATE UNIVERSITY

FACT SHEET

OFFICE OF THE CHANCELLOR, 400 GOLDEN SHORE, P.O. BOX 1500, LONG BEACH, CA 90801-1500, PUBLIC AFFAIRS, (213) 590-5731

THE CALIFORNIA STATE UNIVERSITY

Humboldt State University
California State University, Chico
Sonoma State University
California State University, Sacramento
San Francisco State University
California State University, Hayward
San Jose State University
California State College, Stanislaus
California State University, Fresno
California Polytechnic State University, San Luis Obispo
California State College, Bakersfield
California State Polytechnic University, Pomona
California State University, Northridge
California State University, Los Angeles
California State University, Dominguez Hills
California State University, Long Beach
Office of the Chancellor, Long Beach
California State University, Fullerton
California State University, San Bernardino
San Diego State University

San Jose State University (1857) • California State University, Chico (1887) • San Diego State University (1897) • San Francisco State University (1899) • California Polytechnic State University, San Luis Obispo (1901) • California State University, Fresno (1911) • Humboldt State University (1913) • California State Polytechnic University, Pomona (1938) • California State University, Los Angeles (1947) • California State University, Sacramento (1947) • California State University, Long Beach (1949) • California State University, Fullerton (1957) • California State University, Hayward (1957) • California State College, Stanislaus (1957) • California State University, Northridge (1958) • Sonoma State University (1960) • California State University, San Bernardino (1965) • California State University, Dominguez Hills (1965) • California State College, Bakersfield (1965)

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CSU EDUCATIONAL TELECOMMUNICATIONS

STATUS: JANUARY 1985

STATE UNIVERSITY/ COLLEGE	CABLE	CLOSED-CIRCUIT TV	COMPUTER NETWORK	ELEC-TRONIC MAIL	FACSIMILE	ITFS	MICRO-WAVE	RADIO (NPR)	RADIO	SATELLITE (EARTH STATION)	TV (PUBLIC)	PHON
[illegible]field		X	X	X	X		X					
[illegible]hino	X	X	X	X	X	X	X	X		X		X
[illegible]guez Hills	X	X	X	X	X	X						X
[illegible]resno		X	X	X	X	X	X		X	X		X
[illegible]ullerton	X	X	X	X	X	X						X
[illegible]ayward	X	X	X	X	X				X			X
[illegible]umboldt		X	X	X	X				X			X
[illegible]ong Beach	X	X	X	X	X	X		X				X
[illegible]os Angeles	X	X	X	X	X	X			X	X		X
[illegible]orthridge	X	X	X	X	X	X		X				X
[illegible]omona		X	X	X	X	X				X		X
[illegible]acramento		X	X	X	X	X	X	X				X
[illegible]an Bernardino	X	X	X	X	X	X						X
[illegible]an Diego	X	X	X	X	X	X		X		X	X	X
[illegible]an Francisco	X	X	X	X	X				X	X		X
[illegible]an Jose		X	X	X	X	X			X			X
[illegible]an Luis Obispo		X	X	X	X				X			X
[illegible]onoma		X	X	X	X				X			X
[illegible]anislaus	X	X	X	X	X	X	X		X			X
Chancellor's Office		X	X	X	X	X	X			X		X

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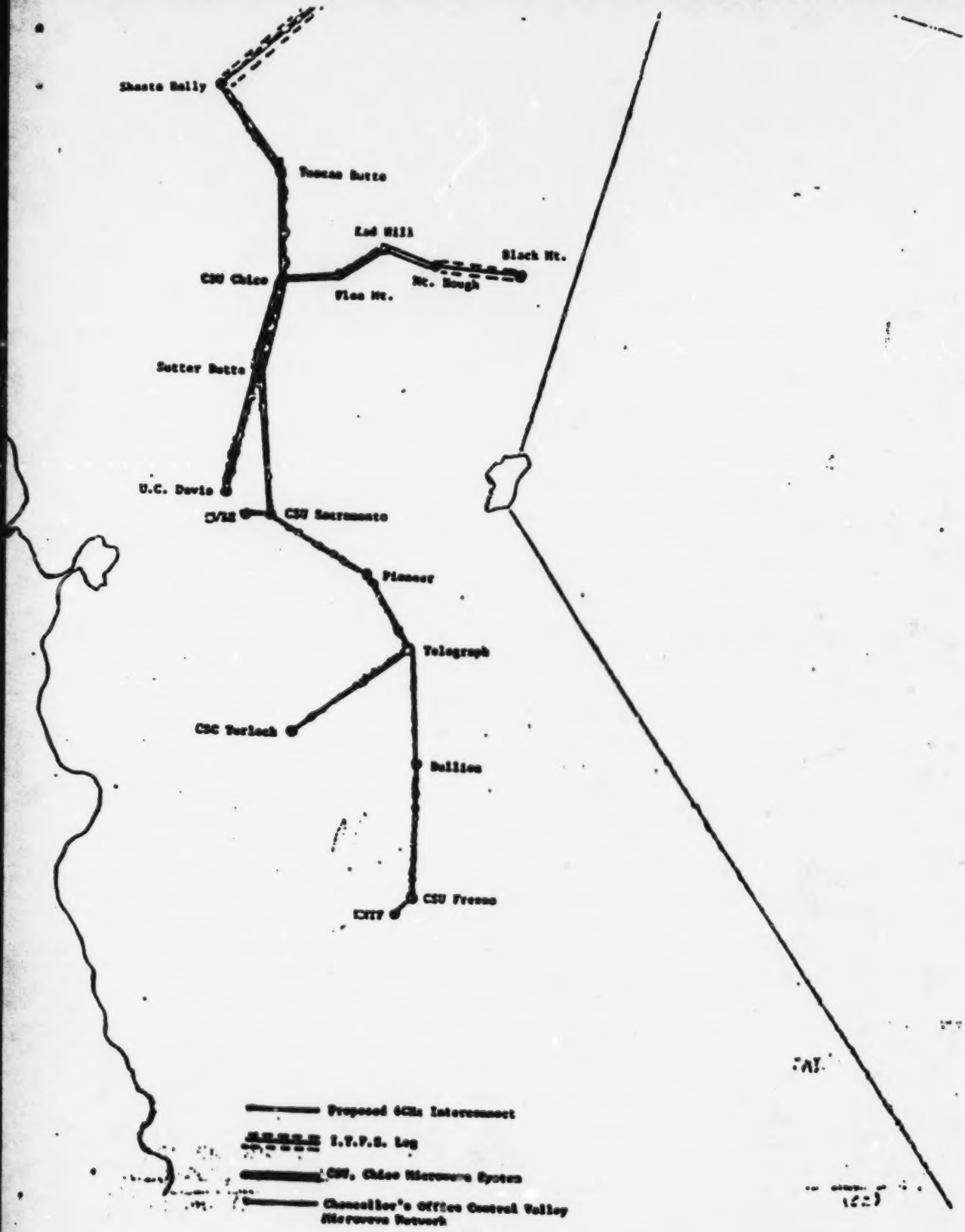

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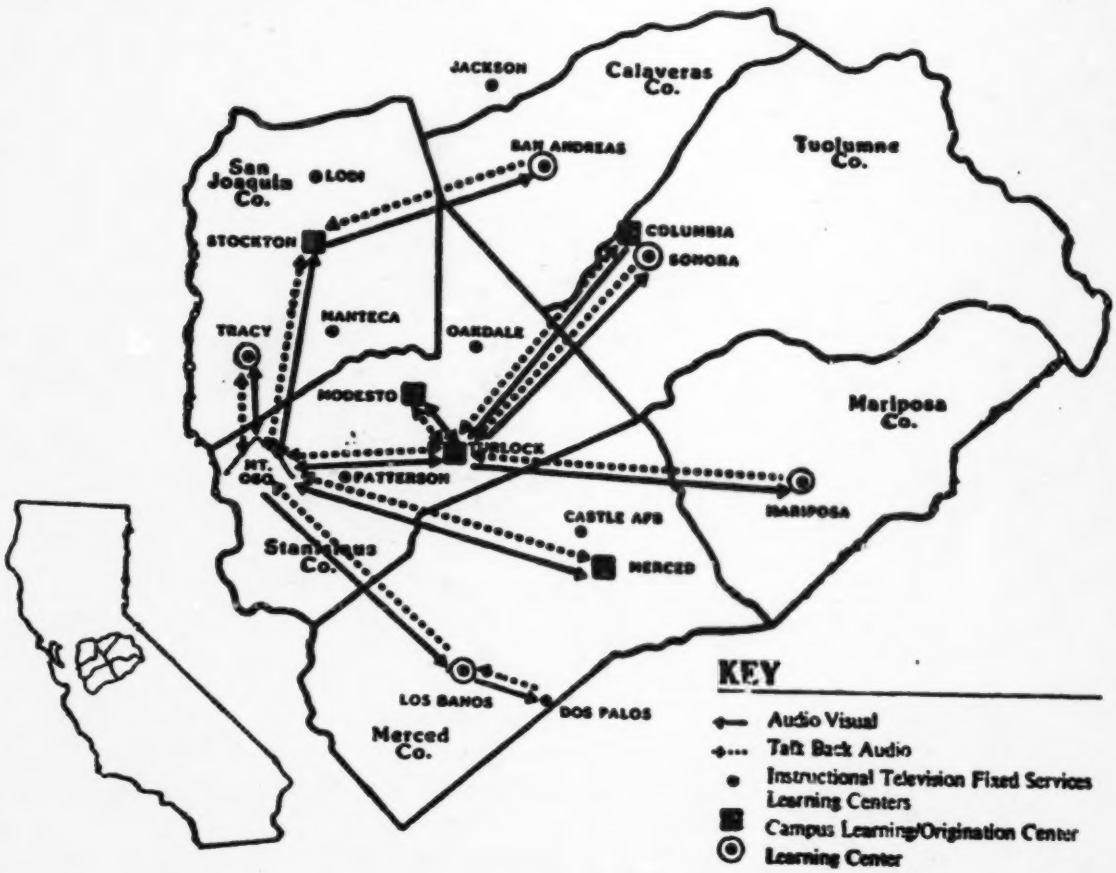
HIGHER EDUCATION CONSORTIUM OF CENTRAL CALIFORNIA

Planned Development:
Additional Learning Centers



Note:
The solid & broken lines connecting CSCS with MCC, MJC, & SJCD are two-directional.

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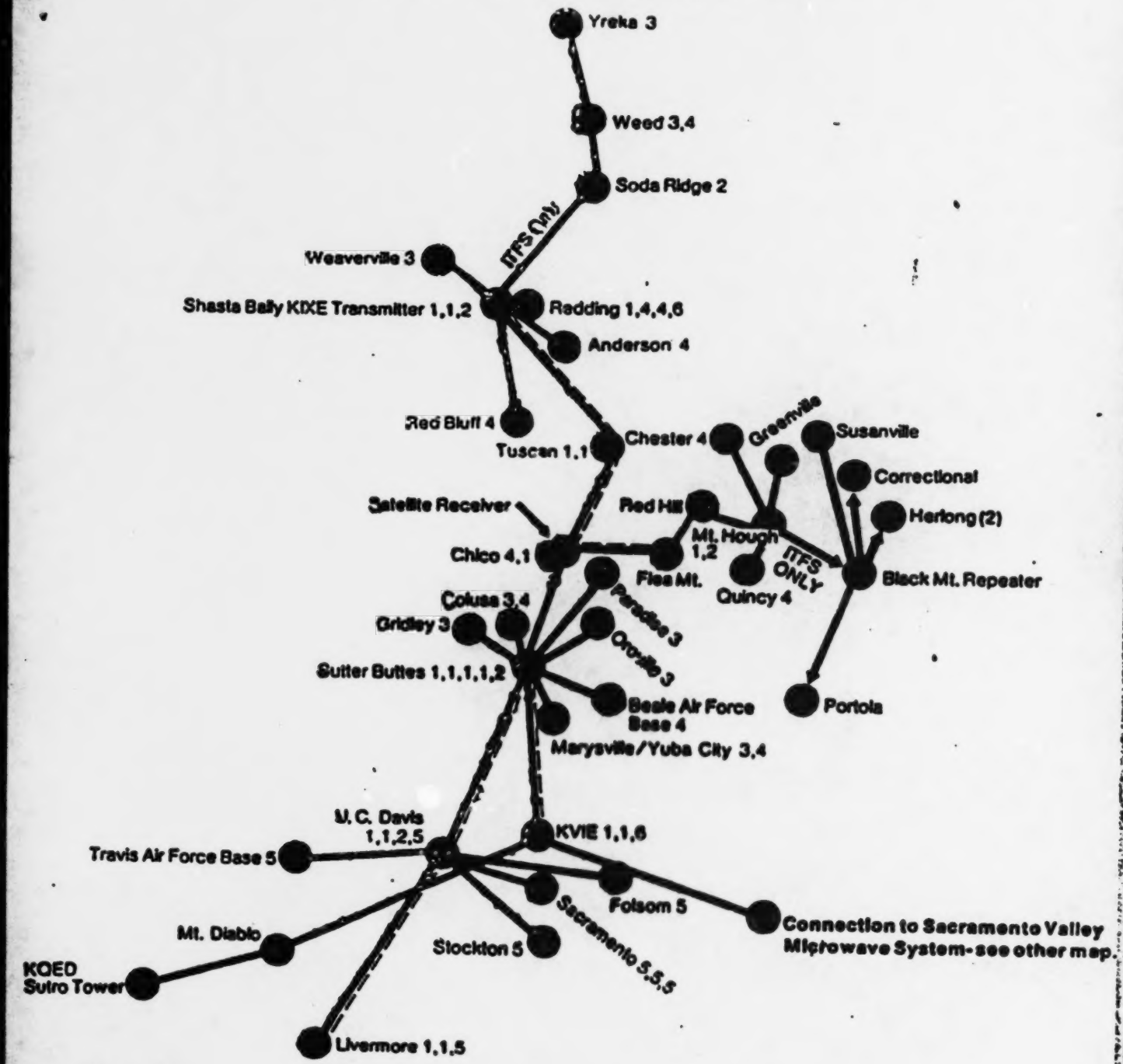
EXISTING CSU, CHICO MICROWAVE/ITFS SYSTEM



One Way Microwave
ITFS Transmitter
Mid Band Cable Head End
CSU, Chico Learning Center Site
U C Davis Learning Center Site
Satellite Downlink

—— Two Way Microwave

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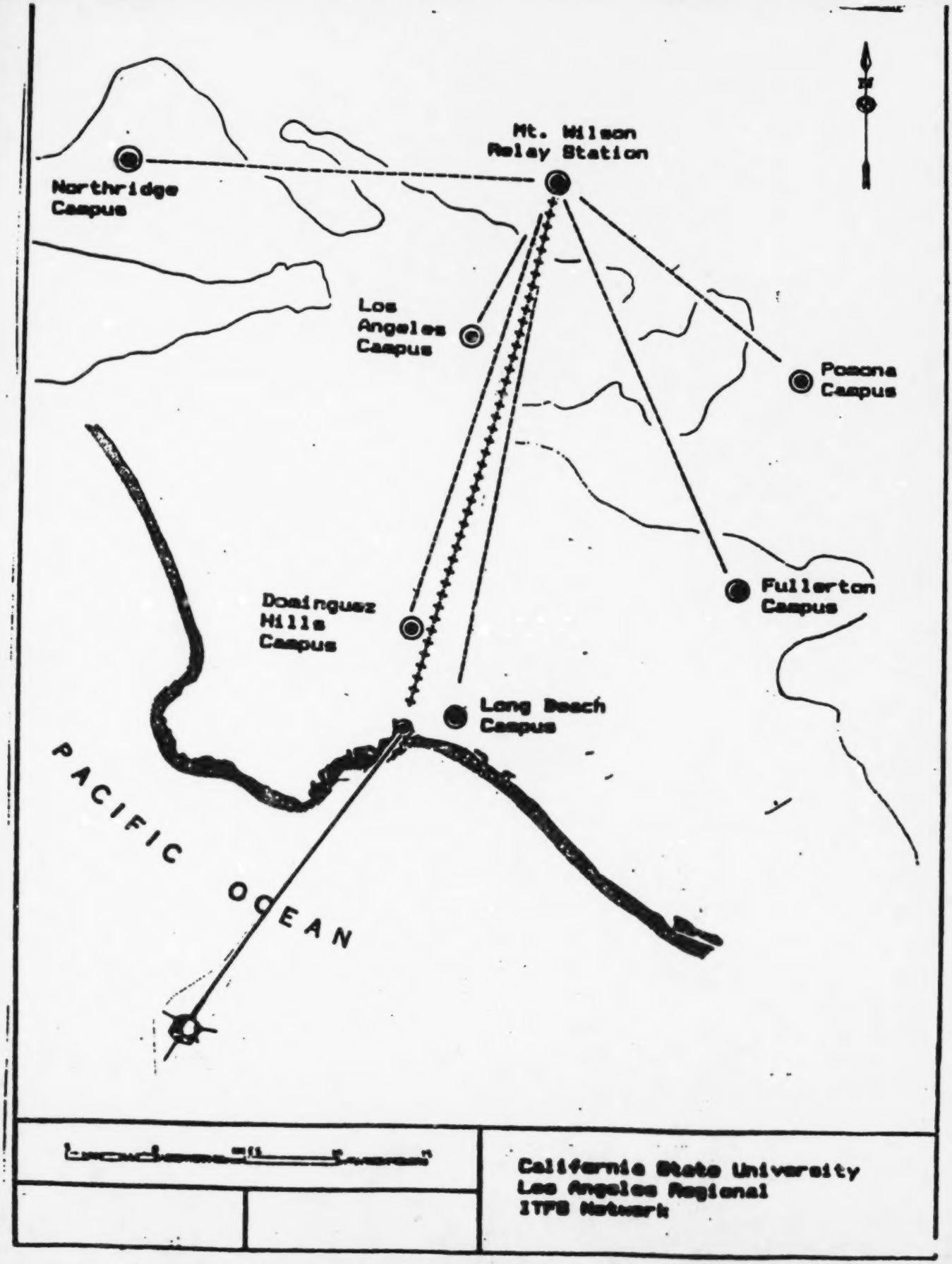

FIGURE 3

BEST COPY AVAILABLE